FOR DISCUSSION ONLY
Washington State Health Information Infrastructure Advisory Board

The Business Case for health information infrastructure (HII)

The business case for community HII must be approached in the context of available options for implementation. The overall question is "what is the business case for each feasible approach to building community HII?"

It is also clear that an incremental approach is essential. Even if a complete system for every person could somehow be built and deployed all at once, the operational disruption from the sudden transition would be intolerable to the users.

Two Approaches

There are two basic approaches to incrementally building HII in a community: 1) provide information about a specific information type, e.g. labs, at a time, gradually progressing to a complete system; and 2) provide complete (or nearly complete) information for individual consumers one at a time, progressing gradually to include the entire community population. These approaches flow from the need of providers for relatively complete health care information within a domain before it has real value. If 50% of all the laboratory results in a community are available, this would not be particularly valuable to providers because there would nearly always be missing information for a given patient. This missing information is a substantial disincentive for using the system. Similarly, if 50% of the information about a given person is available (over multiple information types), the value is also minimal. In general, the completeness needs to be at least 85% before providers will be interested in using a system, and probably must be 95% or more in order to generate consistent interest. Otherwise, the system is merely another one of many sources of partial information, and therefore an "added burden" to providers.

Role of health care stakeholders

There is a business case for a service if the sum of what customers are willing to pay is at least equal to (and hopefully greater than) the total cost of providing that service.   This will occur only if the benefits each customer receives are greater than the price they must pay. For the purposes of community HII, there are four key groups of key stakeholders:

1. providers of care (physicians, etc.)
2. hospitals
3. purchasers of care (employers) [and their agents, i.e. insurers and health plans]
4. consumers

While these four groups are far from homogeneous, they have common economic characteristics (at least for initial analysis). The providers of care are typically compensated on a "piece work" basis, and therefore need to be paid for everything they do. If increased costs from information technology are imposed on them, they need to have corresponding new income to cover those costs. Furthermore, since the use of information technology by providers needs to be greatly increased, it would be counterproductive to charge providers for information services since that would presumably make it less likely that they would use those same funds for their own IT investments.

The hospitals can benefit from IT that makes their operations more efficient because they are typically paid a fixed fee (the "diagnosis-related group" or DRG payment) for each type of patient. Therefore, increased efficiency is rewarded and hospitals are motivated to pay for information services that contribute to such efficiency.

Purchasers of care can benefit from IT that reduces health care costs. However, they typically are reluctant to commit funds unless the service is proven in this regard.

Consumers are interested in improving the quality, safety, and convenience of their own medical care, and will pay for services that accomplish this. For example, a 2005 national survey indicated that 52% of consumers were willing to pay $5 or more each month for their medical records to be electronic.

HII by information type

The two major types of information that can readily be collected in a community HII are lab reports and medications. To establish either of these requires initial startup expenditures of about $6 million, and ongoing costs of about $3 million. Most of the benefits of HII accrue to purchasers and payers, but some portion also goes to hospitals. The overall ROI is between just over 1.0 and about 4 for the first information type depending on the assumptions, so the initial and ongoing investments are worthwhile. However, the purchasers/payers (and, to a lesser extent, the hospitals) must fund the startup costs and the ongoing operating expenses indefinitely.

Once a single information type (e.g. labs) is being collected and distributed with a community HII system, adding medications costs less -- about $1 million to start, and an additional $400K in annual operational costs. This would improve the overall ROI substantially.

Consumers cannot be expected to help fund this option since the information on each individual is not complete. Also, this approach does not provide incentives to physicians to acquire EHRs, leaving the bulk of outpatient information in paper form.

HII by individual

In this model, either a single community repository or multiple repositories are built. In the single repository model, a health information "bank" is created in the community by a non-profit organization and consumers are invited to subscribe for about $5/month each. The operational breakeven occurs at about 100,000 subscribers (approximately $6 million in annual revenue). Optionally, when the subscriber base reaches 150,000, enough cash flow is available so that physicians can be paid approximately $3/encounter for standardized electronic reports of outpatient visits, thereby providing a new $10-20,000/year income stream to fund their own EHR systems.

The startup costs of about $2-3 million can be funded by the purchasers/payers (and possibly the hospitals to a lesser extent). Alternatively, seed funding of about $1 million can be used for consumer marketing; if 100K subscribers can be identified, vendors can be found to develop the system at no cost in exchange for a multi-year operational contract.

If multiple information repositories are desired, each organization building a repository is responsible for the implementation costs. Standard functional interfaces would be required for: 1) access to the patient information (with permission); 2) receipt of new patient information; and 3) receiving authorized search queries for the patient data in the repository. Each repository may choose to charge consumers and/or pay physicians for deposits of information. However, if the various repositories in a medical trading area have do not all consistently pay physicians, the aggregate effect of any incentives on each physician may be too small to pay for an EHR system. This latter problem could be overcome by regulation or agreement among the repository operators.

In either the single or multiple repository scenario, a community "router" that can identify the health record bank for a given person and/or "route" new medical information to a person's account may be valuable (particularly to find the record for patients who do not have their account information with them). Such a community utility could be established by the government or a consortium of health record bank operators.

Note that since the size of a "community" for the single health record bank model would likely be between one and three million individuals, there will be multiple health record banks regardless of which approach is used. The advantage of the single bank model is that it may reduce the startup costs by focusing the resources and energy of the community on a single startup organization. The advantage of the multiple bank approach is that organizations with existing EHR systems can utilize their existing capacity to provide "health record banking" services.